CTN Test Report

91-001 AFTB-ID-90-016

Technical Publication Transfer Test with U.S. Army Information Systems Command: MIL-R-28002 (Raster)

Quick Short Test Report

February 22, 1991

Prepared for
Air Force Logistics Command
Air Force CALS Test Bed (LMSC/SNX)
Wright-Patterson AFB, OH 45433-5000

CTN Test Report
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AFTB Contact
Gary Lammers
(513) 257-3085

CTN Contact
Mel Lammers
(513) 257-3085

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1. Introduction

1.1 Background

The DoD Computer-aided Acquisition and Logistics Support (CALS) Test Network (CTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The CTN is a DoD-sponsored confederation of voluntary participants from industry and government managed by the Air Force Logistics Command.

The primary objective of the CTN is to evaluate the effectiveness of the CALS standards (Standards) for technical data interchange and to demonstrate the technical capabilities and operational suitability of those Standards. Two general categories of tests are performed to evaluate the Standards, formal and informal. Formal tests are large, comprehensive tests that follow a written test plan, require specific authorization from DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, taking only a few hours to set up and execute. They are used by the CTN technical staff to broaden the testing base by including representative samples of the many systems and applications used by CTN participants. They also allow the CTN staff to gain feedback from many industry and government interpretations of the Standards, to increase the base of participation in the CALS initiative, and to respond, in a timely manner, to the many requests for help that come from participants. Participants take part voluntarily and are benefited by receiving an evaluation of their latest implementation (interpretation) of the Standards, interacting with the CTN technical staff, gaining experience in use of the Standards, and developing increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test reported in this QSTR was to analyze CALS raster data provided by the DSREDS Program Office. The test is to verify that the MIL-STD-1840A tape meets CALS requirements and the images can be read and viewed on other systems. To accomplish this test, several tapes were sent. As errors were uncovered, a fix was made and another tape was sent.

2. Test Parameters

Test Plan: AFTB 90-16

Date of Evaluation: 22 February 1991

Evaluators: Air Force CALS Test Bed
HQ AFLC LMSC/SBC
Wright-Patterson AFB, OH

Data Originator: U.S Army Information Systems Command - MICOM
Redstone Arsenal, AL 36898

Data Description: Test Raster File(s)
Raster File(s)

Data Source System:

Raster	Intergraph workstation

Evaluation Tools Used:

1840A	SUN 3/280 CIN Tapetools (v1.0) UNIX Agfa Compugraphics CALS
Raster	Sun 3/60 CIN Raster Tools Agfa Compugraphics

Standards Tested: MIL-STD-1840A Notice 1 (1840A)
MIL-R-28002 Amendment 1 (28002)

3. 1840A Analysis

3.1 External Packaging

The tapes arrived at the Air Force Test Bed enclosed in a box IAW ASTM D 3951. The exterior of the box was marked with the required magnetic tape warning label, MIL-STD-1840A, para. 5.3.1.3.

The tapes were not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. There was no packing list enclosed in the box showing all files that were recorded on the tape, although this information was on a label fastened to the tape reel and this meets the requirement of MIL-STD-1840A, para. 5.3.1.

All tapes arrived in this manner.

3.2 Transmission Envelope

The nine-track tapes received by the Air Force Test Bed contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

3.2.1.1 Tape One

The 1840A tape was run through the AFTB TAPETOOL utility version 1.1. One error, "Invalid record size encountered", occurred while evaluating the contents of the tape labels.

The error relates to the tape label Record Length field for Type D files. Type D files contain variable length records that do not span blocks. All of the Type D files written on the tape were flagged with an illegal value for Record Length. The D001, D001G001, D001T001 files were expected to be Type D according to MIL-STD-1840A. The CTN TAPETOOL Software is expecting a value of 260 in the Record Length field but encountered a record length of 256. MIL-STD-1840A para. 5.2.1.3 requires the variable record size be a maximum of 256 bytes. ANSI X3.27 para. 7.2.3 further states that the length of a Record Control Word (RCW) must be included in a Measured Data Unit (MDU) record length computation. This adds four bytes to the 256 for an MDU total of 260 bytes. ANSI X3.27 para. 8.5.2.6 states that the Record Length field for Type D files shall contain the- maximum length of an MDU. While MIL-STD-1840A permits variable length records, some software

programs are sensitive to the number 260 because it is used to limit the record size when unblocking data. Some systems need this value to declare the maximum allowable record size as an attribute of a file when it is created.

3.2.1.2 Tape Two

Two errors were noted on this tape. The first was the definition of the Declaration file as a FIXED length record. This should have been a Variable length record IAW MIL-STD-1840A, para. 5.2.1.3.

The second error is the "Invalid record size error" discussed above on tape one.

3.2.1.3 Tape Three - Five

These tapes contained one or two raster images. No errors were encountered with the tape format.

3.2.2 Declaration and Header Fields

3.2.2.1 Tape One

Two errors were found in the Document Declaration File header. In Document Declaration File D001, an Invalid change level was flagged. MIL-STD-1840A, para. 5.1.1.2 shows the change level as "ORIGINAL". The tape change level was **"A"**

The second error was the date of issue record. The tape showed **"NONE"** while MIL-STD-1840A, para. 5.1.1.2 requires this record show a date in the **YYYYMMDD** format.

3.2.2.2 Tape Two

Two errors were found on tape two. Both errors were the same as discussed above for tape one.

3.2.2.3 **Tape Three - Five**

No errors were encountered on these tapes.

4. **Raster Analysis**

Both tape one and two had the same raster analysis.

The one raster image was checked using the CTN **CALSTB.350** utility. The files were read into the system and displayed on the screen. The white on black format of the image did present a minor problem in seeing the cursor location.

Each of the tapes received by the AFTB contained either one or two raster images. All but one image did generate an error message

ERROR: ILLEGAL MODE CODE: PROGRAM TERMINATING

Even though this message was displayed, the images were displayed on the screen. Further checking revealed that all of the images were not displayed. Presented below are the pixel and scan line counts as indicated in the header and what actually was displayed.

Tape five contained two raster images. No errors were noted during the loading of the file and the display appeared to fill the screen. The pixel and scan line count were very close to those on the 1840A header and are considered complete images.

	PIXEL	SCAN LINES	
TAPE ONE	3824	4800	
	3536	4154	
TAPE TWO	3824	4800	
	3700	4154	
TAPE THREE	7168	9300	
	7019	9297	(No error message)
	7168	9300	
	6961	2262	
TAPE FOUR	7168	9300	
	6978	2263	

	7168	9300	
	7002	3519	
TAPE FIVE	7168	9300	(No error message)
	7037	9280	
	7168	9300	(No error message)
	6978	9295	

The same tape was read using the AGFA Compugraphics read1840A. The files were correctly read off the tape. The Agfa ccitt2caps utility translated the raster image and displayed on the screen. The partial images were also displayed on the screen using this product. The last tape had complete and usable image files.

5. Conclusions and Recommendations

In summary, the MIL-STD-1840A tape from U.S. Army Information Systems Command could be read using the CTN TAPETOOL utility and the Agfa Compugraphics software. The errors in the MIL-STD-1840A headers on the early tapes were minor and were corrected by the third tape. Although errors in the scan line count persisted until the fifth tape, they have now been corrected and the images are now usable.

6. Appendix A - Tape Tool Report Logs

6.1 Tape Catalog

CALS Test Network Tape Evaluation - Version 1.1

MIL-STD-1840A Tape Evaluation Catalog

Wed Oct 31 17:05:56 1990 Document File Set Directory: /cals/tapetool2/Set019

Page: 1

File Name	File Type	Record Type	Record Length
d001	Document Declaration	D	00256
d001r001	Raster	F	00128
d001r002	Raster	F	00128

6.2 Tape Evaluation Log

Minor errors were reported on the first two tapes. No errors were reported on the last three tapes.

6.3 Tape Validation Log

Minor errors were reported on the first two tapes. No errors were reported on the last three tapes.